

THE CAMBRIDGE STATISTICS DISCUSSION GROUP

Thursday 13th May 1999 7:15 for 7:45

Honor Fell Room,
Strangeways Research Laboratory,
Worts Causeway, Cambridge

Hidden Markov Models of Protein Structure and Protein Sequence Evolution

Nick Goldman

Department of Genetics,
Cambridge

Abstract: Previous methods in phylogenetic inference from molecular sequence data treat all the sites of sequences as being i.i.d. This is not a reasonable assumption. In the (previously unrelated) field of protein structure prediction, the effects of correlations in data due to molecular sequences' shared ancestry have been widely ignored. There is evidence that this has a detrimental effect on the accuracy of structure prediction. The current state of affairs will be described in a research project which combines sequence evolution and sequence structure, going some way towards dealing with the shortcomings described above and improving the results of both types of analysis.

Speaker: Nick Goldman has a first degree in Mathematics and a doctorate in Zoology (inference of evolutionary history). Between these, he worked for two years in the Biometrics Section of the Natural History Museum, London, providing mathematical support to the scientific research staff. Since 1992 he has researched on phylogenetic (and other) analyses of molecular sequence data, first at the MRC-National Institute for Medical Research and since 1995 as a Wellcome Trust Fellow in the Department of Genetics.

Directions: Head away from Cambridge city centre along the Hills Road. About 200 yards after the hospital roundabout a road (signposted 'Fulbourn 3') forks off to the left – this is Wort's Causeway. Strangeways Research Laboratory is the first building on the right on Wort's Causeway. There is car parking both at the front and the rear of the building. Access to the building may be difficult after 7:45.

Next Meeting:

4th October – Chris Palmer (IPH).
February 2000 – Sally Stenning (CTO).

Supper: Some members eat regularly in the University Centre before each meeting at 6-15. Feel free to join them.

Subscriptions: of 4 pounds per member are now due for the 1998-9 session. Cheques should be made payable to Margaret Corbett and may be posted to the secretary at the address below.

Secretary: Peter Watson, MRC Cognition and Brain Sciences Unit, 15 Chaucer Road, Cambridge CB2 2EF;

telephone 01223 355294 Extension 380; E-mail peter.watson@mrc-cbu.cam.ac.uk